

THIN FILMS FOR MAGNETIC DEVICES

Abstract of the Disclosure

Methods are provided for forming uniformly thin layers in magnetic devices. Atomic layer deposition (ALD) can produce layers that are uniformly thick on an atomic scale. Magnetic tunnel junction dielectrics, for example, can be provided with perfect uniformity in thickness of 4 monolayers or less. Furthermore, conductive layers, including magnetic and non-magnetic layers, can be provided by ALD without spiking and other non-uniformity problems. The disclosed methods include forming metal oxide layers by multiple cycles of ALD and subsequently reducing the oxides to metal. The oxides tend to maintain more stable interfaces during formation.

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